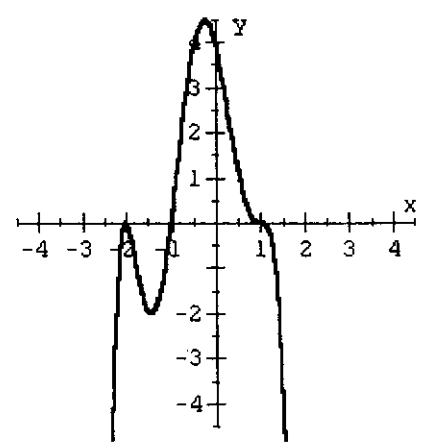
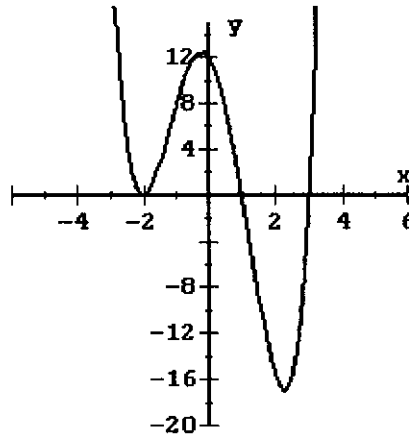
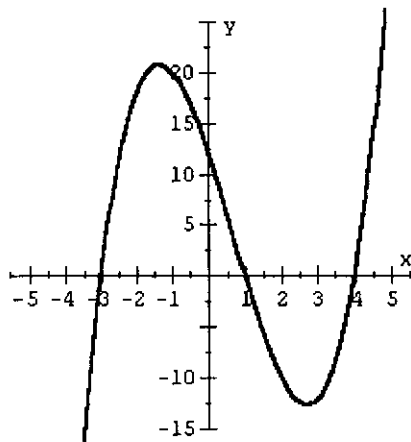


# Unit 2 Lesson 4B Homework

## Factoring Polynomials – Finding Zeros of Polynomials – 1

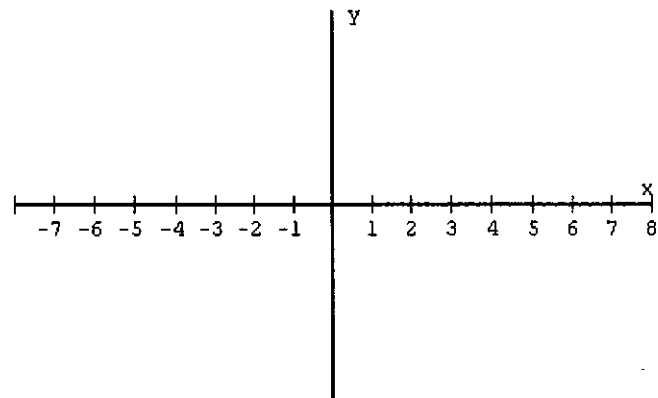
Give a possible **factorization** of the following polynomials. Do NOT multiply out the factors!



1) \_\_\_\_\_ 2) \_\_\_\_\_ 3) \_\_\_\_\_

- 4) Sketch a Graph of a polynomial with the given zeros and corresponding multiplicities.  
(note: the graph is not unique)

$x = -5$ , of multiplicity 2  
 $x = -1$ , of multiplicity 1  
 $x = 2$ , of multiplicity 3  
 $x = 4$ , of multiplicity 2



- 5) Find the zeros of the following polynomial function and state the multiplicity of each zero.

$$f(x) = x(x-1)^2(2x+1)(x+4)^3$$

- 6) Find a polynomial function of degree 3 with the given zeros.

Write your answer in the form:  $f(x) = ax^3 + bx^2 + cx + d$

$x = -2$  ,  $x = -1$  ,  $x = 2$

## Factoring Polynomials – Finding Zeros of Polynomials - 1

- 7) Find a polynomial function (**factored form**) of degree 3 which has the corresponding table of values to the right.

x	y
4	18
3	0
2	-4
1	0
0	6
-1	8
-2	0
-3	-24
-4	-70

**Factor** the following polynomial functions completely.  
**Exact answers only!!! No Decimal approximations allowed!**

8) **FACTOR:**  $f(x) = x^3 + 5x^2 - 9x - 45$

9) **FACTOR:**  $g(x) = x^4 - 81$

**List** the real zeros of the following polynomial. **Exact** answers only!!! No Decimal approx.

10)  $h(x) = 2x^3 + 8x^2 + 8x$